μA741C
HIGH PERFORMANCE OPERATIONAL AMPLIFIER
FAIRCHILD LINEAR INTEGRATED CIRCUITS

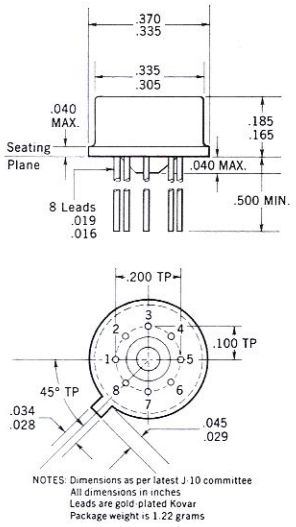
- **NO FREQUENCY COMPENSATION REQUIRED**
- **SHORT-CIRCUIT PROTECTION**
- **OFFSET VOLTAGE NULL CAPABILITY**
- **LARGE COMMON-MODE AND DIFFERENTIAL VOLTAGE RANGES**
- **LOW POWER CONSUMPTION**
- **NO LATCH UP**

GENERAL DESCRIPTION — The μA741C is a high performance monolithic operational amplifier constructed on a single silicon chip, using the Fairchild Planar* epitaxial process. It is intended for a wide range of analog applications. High common mode voltage range and absence of "latch-up" tendencies make the μA741C ideal for use as a voltage follower. The high gain and wide range of operating voltages provide superior performance in integrator, summing amplifier, and general feedback applications. The μA741C is short-circuit protected, has the same pin configuration as the popular μA709 operational amplifier, but requires no external components for frequency compensation. The internal 6dB/octave roll-off insures stability in closed loop applications. For full temperature range operation (−55°C to +125°C) see μA741 data sheet.

ABSOLUTE MAXIMUM RATINGS

Supply Voltage	±18 V
Internal Power Dissipation	500 mW
Differential Input Voltage	±30 V
Input Voltage (Note 1)	±15 V
Storage Temperature Range	−65°C to +150°C
Operating Temperature Range	0°C to +70°C
Lead Temperature (Soldering, 60 sec)	300°C
Output Short-Circuit Duration (Note 2)	Indefinite

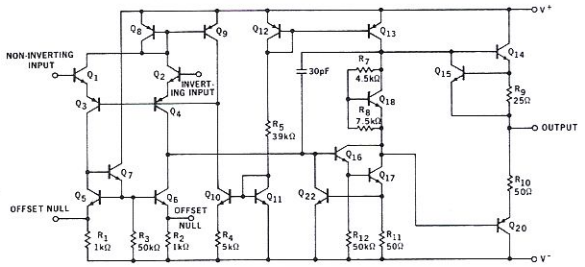
PHYSICAL DIMENSIONS
in accordance with
JEDEC (TO-99) outline



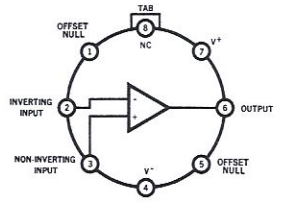
NOTES: Dimensions as per latest J-10 committee
All dimensions in inches
Leads are gold-plated Kovar
Package weight is 1.22 grams

ORDER PART NO. U5B7741393

SCHEMATIC DIAGRAM

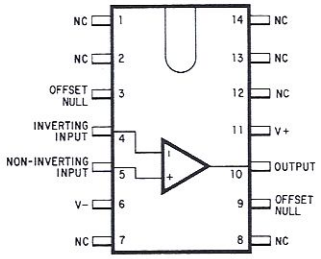


CONNECTION DIAGRAMS

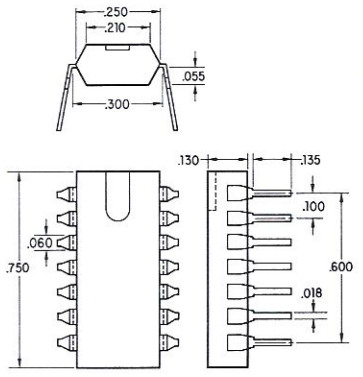


NOTE: Pin 4 connected to case.

(TOP VIEW)



TYPICAL DUAL IN-LINE PACKAGE



NOTES: All dimensions in inches
Leads are intended for insertion in hole rows, .300 centers

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NOTES:
(1) For supply voltages less than ±15 V, the absolute maximum input voltage is equal to the supply voltage.
(2) Short circuit may be to ground or either supply.

*Planar is a patented Fairchild process.

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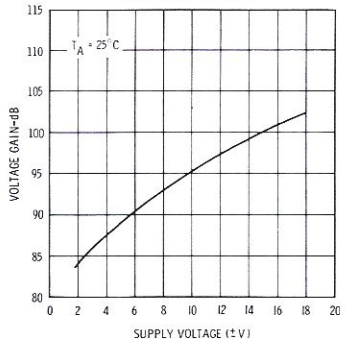
ELECTRICAL CHARACTERISTICS ($V_S = \pm 15$ V, $T_A = 25°C$ unless otherwise specified)

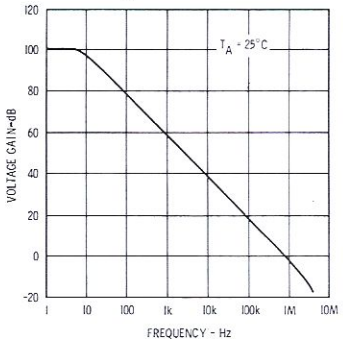
PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Input Offset Voltage	$R_S \leq 10$ kΩ		2.0	6.0	mV
Input Offset Current			30	200	nA
Input Bias Current			200	500	nA
Input Resistance		0.3	1.0		MΩ
Large-Signal Voltage Gain	$R_L \geq 2$ kΩ, $V_{out} = \pm 10$ V	20,000	100,000		
Output Voltage Swing	$R_L \geq 10$ kΩ	±12	±14		V
	$R_L \geq 2$ kΩ	±10	±13		V
Input Voltage Range		±12	±13		V
Common Mode Rejection Ratio	$R_S \leq 10$ kΩ	70	90		dB
Supply Voltage Rejection Ratio	$R_S \leq 10$ kΩ		30	150	μV/V
Power Consumption			50	85	mW
Transient Response (unity gain)	$V_{in} = 20$ mV, $R_L = 2$ kΩ				
	$C_L \leq 100$ pF				
Risetime			0.3		μs
Overshoot			5.0		%
Slew Rate (unity gain)	$R_L \geq 2$ kΩ		0.5		V/μs
The following specifications apply for $0°C \leq T_A \leq +70°C$:					
Input Offset Voltage	$R_S \leq 10$ kΩ			7.5	mV
Input Offset Current				300	nA
Input Bias Current				800	nA
Large-Signal Voltage Gain	$R_L \geq 2$ kΩ, $V_{out} = \pm 10$ V	15,000			
Output Voltage Swing	$R_L \geq 2$ kΩ	±10			V

TYPICAL PERFORMANCE CURVES

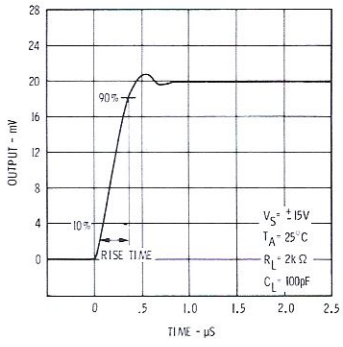
OPEN LOOP VOLTAGE GAIN



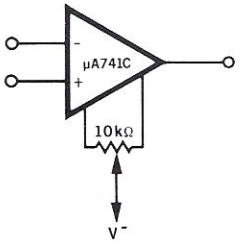
OPEN LOOP FREQUENCY RESPONSE



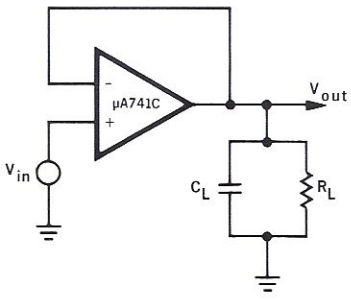
TRANSIENT RESPONSE



VOLTAGE OFFSET NULL CIRCUIT



TRANSIENT RESPONSE TEST CIRCUIT



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